L 59241-65
ACCESSION NR: AT5007937

SUBMITTED: 26May64   ENCL: 00   SUB CODE: NP

NO REF SOV: 003   OTHER: 002

Card 3/3

IVANOV, N.F.; SIVKOV, Yu.P.; SOLNYSHKOV, A.I.

Measuring the phase volume of the ion beam from the injector of a linear accelerator. Prib. i tekh.eksp. 10 no.5:30-34
S-O '65.   (MIRA 19:1)

1. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury Gosudarstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR, Leningrad.

L 26513-66   EWT(m)   IJP(c)   GS

ACCESSION NR: AT6012260   SOURCE CODE: UR/0000/65/000/000/0001/0017

AUTHORS: Sivkov, Yu. P.; Solnyshkov, A. I.

ORG: none

TITLE: Limitations of accelerator current, connected with limiting density of the particles in the phase volume

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Doklady, 1965. Ogranicheniya toka v uskoritele, svyazannyye s predel'noy plotnost'yu chastits v fazovom ob"yeme, 1-17

TOPIC TAGS: particle accelerator, focusing accelerator, high energy accelerator, phase velocity, particle distribution, particle beam

ABSTRACT: The author discusses methods of increasing accelerator current by increasing the acceptance of the accelerator (the volume in phase space) or by more uniformly filling the acceptance. The general equation of the acceptance surface is written out for linearly independent focusing with in the x and y directions and for an elliptical aperture. Conditions under which the beam introduced into the ac-

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ACCESSION NR: AT6012260

celerator is focused on points inside the acceptance are then derived. In view of the mathematical difficulties involved in interpreting the four-dimensional results, the authors consider also the simpler problem, wherein injection of the beam into the accelerator is considered as the transformation of the phase volume of the beam (emittance) into the acceptance volume with minimum loss. It is concluded that to determine the maximum oscillation amplitudes in a linearly-focusing accelerator with independent focusing with respect to x and y, it is sufficient to measure the projection of the four-dimensional emittance on a given reference plane. To determine more complicated characteristics, such as the fraction of the beam which will have an oscillation amplitude below a certain specified value, or to determine the maximum density in the phase volume, it is necessary to measure the distribution of the beam density in four-dimensional phase space. However, if the emittance is bounded by a certain ellipsoidal surface, measurement of the particle density in two-dimensional projection (cross section) of the emittance is possible. The theoretical conclusions are compared with experimental data obtained at NIIEFA on the distribution of particles in the beam of a dual plasmatron injector, accelerated to approximately 600 keV (Pribory i tekhnika eksperimenta, in press). The variation of the phase volume of the beam as a function of the discharge current, the magnetic field in the ion source, the focusing voltage, and the particle energy were determined. The focusing voltages has practically no influence on the magnitude of the phase

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L 26513-66
ACCESSION NR: AT6012260

volume for a given current. An increase in the discharge current and the magnetic
field in the ion source greatly increase the current. The particle density in four-
dimensional phase volume turns out to be constant, but further research is necessary
to check on this conclusion. With this in mind, estimates are presented for the
maximum number of particles that can be injected some of the accelerators now in op-
eration. The estimates show that the limitations connected with the limiting den-
sity of the particles in the phase volume are very significant for most modern ac-
celerators. Orig. art. has: 22 formulas, 3 figures, and 2 tables.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 006/

Card 3/3

L 28040-66   EWT(m)   IJP(c)

ACC NR: AP5027003   SOURCE CODE: UR/0120/65/000/005/0030/0034

AUTHOR: Ivanov, N. F.; Sivkov, Yu. P.; Solnyshkov, A. I.

ORG: Scientific Research Institute of Electrophysics Equipment of GKAE,
Leningrad (Nauchno-issledovatel'skiy institut elektrofizicheskoy
apparatury GKAE)

TITLE: Measurement of phase space of the ion beam in the injector of a
linear accelerator

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 30-34

TOPIC TAGS: linear accelerator, proton beam

ABSTRACT: The phase space was measured for an axisymmetric proton beam
having an energy of 500 to 600 kev and a current of the order of
hundreds of milliamperes. The distribution of the beam density in the
phase space was reproduced on photographic film. Calculations of the
beam parameters in the four-dimensional phase space was made in cylin-
drical coordinates. An equation was derived for the ellipsoidal phase
space. The measurements were conducted by using a device similar to
that described by L. E. Collins and P. T. Strout in Nucl. Instum. and
Methods, 1964, 26, 157. However, the device used by the authors was
provided with a photo-recording camera placed at 30 cm from the 0.06 mm

UDC: 621.384.6.01

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L 28040-66

2

ACC NR: AP5027003

slits of two diaphragms. The device was shown in a photo and its action was explained. A MF-4 microphotometer was used for determining the density distribution recorded by the film. Then, the experimental data were analyzed and the results calculated. An example of the beam density distribution in a transverse phase space was mapped out in a diagram. The results obtained under different conditions and at the currents varying from 350 to 480 ma were summarized in a table. The current characteristics were plotted for four-and two-dimensional phase spaces and for seven various operating conditions. The analysis of curves showed that, in accordance with Liouville's Theorem, the focussing voltage produced no effect upon the phase space. The dependence of the current on the two-dimensional phase space was more expressive. The highest current density obtained at 400 ma was equal to 120 ma/cmmrad. The thanks were expressed to I. M. Kapchinckiy and V. A. Batalin for the discussion of the results obtained in the experiments. Orig. art. has: 5 figures and 9 formulas.

SUB CODE: 18 / SUBM DATE: 11Aug64 / ORIG REF: 002 / OTH REF: 004

Card 2/2 CC

L 07199-67   EWT(1)/EWT(m)   IJF(c)   AT

ACC NR: AT6031752   SOURCE CODE: UR/3092/66/000/004/0003/0022

AUTHOR: Ivanov, N. F.; Sivkov, Yu. P.; Solnyshkov, A. I.

ORG: none

TITLE: Characteristics of the ion beam produced by the injector of a linear accelera-
tor

SOURCE: Moscow. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury.
Elektrofizicheskaya apparatura, no. 4, 1966, 3-22

TOPIC TAGS: ion beam, linear accelerator, plasmatron, preinjector

ABSTRACT: The structure of a beam of ions with an energy of 500-700 kev obtained at
the output of the proton-synchrocyclotron preinjector was investigated. The beam is
designed for injection into a linear accelerator and for this reason the density dis-
tribution of ions over the phase space is the most important characteristic of the
beam. Essentially, it determines the value of the current which can be captured by
the linear accelerator. The transverse phase volume and the magnitude of the current
were determined at a distance of approximately 1 meter from the output end of the
focusing arrangement used in the linear accelerator. A proton source of the duoplas-
matron type and the injector optics make it possible to obtain the crossover of the
beam at this point when the maximum current is 500 ma, thereby providing for the op-

Card 1/2

SOLNYSHKOV, V.A., mladshiy nauchnyy sotrudnik

Study of the discharge capacity of broad-crested weirs. Izv.
VNIIG 65:125-131 '60.   (MIRA 14:5)
                    (Weirs)

SOLNYSHKOV, V.A., mladshiy nauchnyy sotrudnik

Utilization of hydroelectric power station turbines as spillways.
Izv. VNIIG 65:133-138 '60.   (MIRA 14:5)
                    (Spillways)

SOLNYSHKOV, V.A., red.; ARABADZHYAN, I.R., red.; GOL'DIN, A.L.,
red.; ZHAROV, N.I., red.; IOKHEL'SON, A.Ya., red.;
KRICHEVSKIY, I.Ye., red.; SKOMOROVSKIY, Ya.G., red.;
SUDAKOV, V.B., red.;SHEVCHENKO, A.N., red.; RZHONSNITSKIY,
B.N., red.

[Collection of reports on hydraulic engineering] Sbornik
dokladov po gidrotekhnike. Moskva, Gosenergoizdat, 1963.
262 p.   (MIRA 17:9)
1. Nauchno-tekhnicheskaya konferentsiya molodykh nauchnykh
rabotnikov. 5th, Leningrad, 1959.

ARABADZHYAN, I.R., red.; IZMAYLOVA, R.A., red.; KRAYEV, G.A., red.
[deceased]; KRICHEVSKIY, I.Ye., red.; SOKOLOV, I.B., red.;
SOLNYSHKOV, V.A., red.; STREL'TSOVA, T.D., red.; FOMIN,
G.D., red.; SHUL'MAN, S.G., red.; ABRAMSON, L.S., tekhn.red.

[Collection of papers on hydraulic engineering] Sbornik dok-
ladov po gidrotekhnike. Moskva, Gosenergoizdat, 1962. 284 p.
(MIRA 17:3)

1. Nauchno-tekhnicheskaya konferentsiya molodykh nauchnykh
rabotnikov. 4th, 1962.

SOLNYSHKOV, Vol'fram Anatol'yevich; RZHONSNITSKIY, B.N., red.

[Study of the suction pipes of hydraulic turbines] Issle-
dovaniia otsasyvaiushchikh trub gidroturbin. Moskva, Gos-
energoizdat, 1962. 106 p.   (MIRA 17:4)

SOLNYSHKOVA, S. N.

5

Mechanism of the oxidation of microconcentrations of nitric oxide in the corona discharge. T. V. Zabolotskiǐ and S. N. Solnyshkova. *Zhur. Obshcheǐ Khim.* (J. Gen. Chem.) **20**, 1388 91 (1950)—In mixts. of O_2, N_2, and H_2 contg. NO in contents of the order of 1 p.p.m., the NO is oxidised to an extent varying between 50 and 100%, depending on the compn. of the gas. With high H_2 contents (~90%), no O_3 and no N_2O_5 are detected in the gas, and the degree of oxidation is ~50%. With 0.012-0.016% O_3, there is still no N_2O_5 in the products, and the degree of oxidation attains only 70% with 0.006% O_3. With the use of 0.007% O_3, some N_2O_5 appears and the oxidation then reaches 100%; this occurs in gas mixts. contg. not over 65% H_2, and not below 7% O_2. With H_2 contents higher than 65%, part of the O_3 formed will be spent in oxidation of H_2, and the degree of oxidation of NO will remain below 100% even if the O_3 content of the gas is increased; thus, with 85% H_2, and 11% O_2, the O_3 content is 0.005%, no N_2O_5 being found, and the degree of oxidation of NO being only 80%. Without the oxidation of H_2 taken into account, the ratio O_3/NO should be 0.5, which corresponds to the reaction $2NO + O_3 \rightarrow N_2O_5$, followed by $N_2O_5 + NO \rightarrow 2NO_2$. An excess of O_3 is needed for complete oxidation of NO in H_2-contg. gas mixts. The accelerating effect of the elec. discharge is demonstrated by a mixt. of N_2 with 1.5% O_2 and ~1 p.p.m. NO; in the elec. field, oxidation is complete, whereas without a field it attains only 8-10%. The final O_3 content is found to be 0.007%. Introduction of preliminarily ozonized O_2 offers no advantage over direct ozonisation in the discharge.   S. Thon

SOLOBAY, M. A., Cand Med Sci -- (diss) "Microbiological charac-
teristics and certain data on the epidemiology of dysentery pro-
duced by Newcastle bacteria in the city of Odessa." Odessa,
1957. 15 pp (Odessa State Med Inst im N. I. Pirogov), 200
copies (KL, 2-58, 117)

KALASHNIKOV, V.I., (st. Chernovtsy); SHAMIS, I.M., glavnyy bukhgalter
        (st. Chernovtsy); SOLOBAYENKO, L.D., ekonomist (st. Chernovtsy)

    Advanced technology of car repair and improved cost accounting.
    Zhel. dor. transp. 38 no.8:54-57 Ag '56.   (MLRA 9:10)

    1. Zamestitel' nachal'nika Chernovitskogo vagonnogo uchastka
    (for Kalashnikov).
            (Railroads--Cars--Maintenance and repair)

S/194/62/000/008/032/100
D201/D308

AUTHOR: Solobayev, Sh.A.

TITLE: Scientific and technical conference on telemechaniza-
tion of the national economy of the USSR, Moscow,
November 16-21, 1959

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 8, 1962, abstract 8-2-180 m (Sb. nauchno-tekhn.
inform. po elektrifik. s. kh. Vses. in-t n.-i. elek-
trifik. s. kh., 1961, no. 9, 60 - 61)

TEXT: 148 scientific and research institutes, design institutes
and design offices were represented at the regular scientific and
research conference on the problems of design and production of te-
lemechanic and communication channel instrumentation, held in Mos-
cow. 55 papers on production, design and utilization of telemecha-
nic instrumentation were presented. It was pointed out that the
means of telemechanics find more and more applications in power en-
gineering, petroleum and gas industry, pipeline transport, coal in-
dustry, agriculture and on railways. The fundamental trends in the
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Scientific and technical conference ...   S/194/62/000/008/032/100
D201/D308

development of the telemechanic instrumentation are as follows: 1)
Creation of a single set of instruments for concentrated and scatte-
red objects; 2) automation of controlled and control points; 3) use
of contactless elements. New works on HF-channel telemechanics, sig-
nal distortion in electric circuits and methods of investigating
the interference in telemechanic channels were discussed. [Abstrac-
ter's note: Complete translation.]

Card 2/2

SOLOBELEV, S.L.

SOV/30-59-1-47/57

30(5)
AUTHOR: Chesnokov, Yu. E., Candidate of Philosophical Sciences

TITLE: Problems Concerning Philosophy of Modern Natural Science (Filosof-skiye voprosy sovremennogo yestestvoznaniya)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 132-138 (USSR)

ABSTRACT: At the end of October last year an All-Union conference took place which dealt with these problems. The conference had been convened by the Akademiya nauk (Academy of Sciences) and the Ministerstvo vysshego obrazovaniya SSSR (Ministry of Higher Education of the USSR). More than 600 well-known experts in the spheres of sciences and philosophy took part, among them Academicians and Corresponding Members, Academy of Sciences, USSR, representatives of the Academies of the Union Republics and Branch Academies as well as scientists from scientific research institutes and universities. Scientific representatives from Bulgaria, Rumania, Germany, Hungary and Czecho-slovakia were present. It was the aim of the conference to unite the creative powers of Soviet philosophers and scientists for the purpose of dialectical-materialist generalization of the achievements of modern science and for raising its level which is intended to contribute towards a solution of the most important scientific problems in as short a period as possible. Such were the ideas expressed by Academician A. N. Nesmeyanov, President of the AS USSR and K. V. Ostrovityanov, Chairman of the Committee for the Organization of the Conference on the occasion of their opening speeches. Further, the following reports were heard and discussed: B. M. Kedrov, Academician, spoke about Lenin's "materialism and empiriocriticism" as the great ideological weapon for the perception and transformation of the world. S. I. Vavilov, Academician of the AS UkrSSR, dealt in his report with V. I. Lenin and the philosophical problems of modern physics. D. I. Blokhintsev, Doctor of Philosophical Sciences, Corresponding Member, Academy of Sciences USSR, reported on the interrelation in nature of the forms of movement of matter. V. A. Fok, spoke about the interpretation of quantum mechanics. A. D. Aleksandrov, Corresponding Member, Academy of Sciences, USSR, spoke about the philosophical meaning and the importance of the theory of relativity. A. I. Oparin, Academician, and A. A. Imshenov, Professor, dealt with cybernetics and natural science. A. I. Oparin, Academician, spoke about some methodical problems of biology. V. A. Engel'gardt, Academician, and G. M. Frank, Corresponding Member, AS USSR, reported on the role of physics and chemistry in investigating biological problems. A. I. Oparin, Academician spoke about the formation of life in the light of the achievements of modern natural science. I. P. Grishchenko's report dealt with the Lenin's reflex theory and modern physiology of the sexual organs. A. I. Zhamalinij opposed the opinion approved by N. I. Oparin's countries a crisis in physics is approaching.

Card 1/4

Card 2/4

SOLOBEY, I. N.

USSR/ Biology – Botany

Card 1/1   : Pub. 86 – 21/46

Authors   : Solobey, I. N.

Title   : Water caltrop in bodies of water of forest areas

Periodical   : Priroda, 43/9, 97-99, Sep 1954

Abstract   : Description is given of water caltrop found in lakes and back
                waters of rivers in Byelorussia. A comparison is made of the
                food value of the seeds of this plant with maize corn, potatoes
                and wheat with figures of the percentages of proteins, fats,
                starch and sugar. Some directions are given as to methods of
                increasing the growth of water caltrop. Illustrations.

Institution   : .....

Submitted   : .....

SOLOBODYANIK, N. I.

Agricultural Machinery

Threshing, rubbing, and extracting vegetable seeds. N. I. Slobodyanik. Sel.i sem. 19, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

5(4)
AUTHORS: Miller, V. B., Neyman, M. B.,   SOV/76-33-2-35/45
Solobovnikov, S. P.

TITLE: A Study of the Reaction of Isotopic Exchange Between $CH_2J_2^*$

and J_2 by the Intermittent Illumination Method (Issledovaniye

reaktsii izotopnogo obmena mezhdu $CH_2J_2^*$ i J_2 metodom

preryvistogo osveshcheniya)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2,
pp 457 - 462 (USSR)

ABSTRACT: The method mentioned in the title is based upon an impulse
radiation (Ref 4) with a definite ratio between the illuminated
and dark periods. This "pulsating" illumination is usually
accomplished by means of a rotating disk with slits in it,
which interrupts a light beam or allows it to penetrate the
slits periodically. In the present work tagged methylene
iodide was used which was obtained from CH_2J_2 and NaJ^{131}. The

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A Study of the Reaction of Isotopic Exchange Between   SOV/76-33-2-35/45
$CH_2J_2^*$ and J_2 by the Intermittent Illumination Method

investigations were carried out using an apparatus (Fig 3)
the reaction vessel of which was located in an air thermostat,
and the reaction components could be separated after the
experiment by adsorption of the iodine on silver. The
irradiation was carried out using an SVDSh-250-3 Hg lamp and
the light impulses could be varied from 1 to 10^{-4} seconds by
means of a rotating disk. The exchange between $CH_2J_2^*$ and J_2
was tested in the dark in illuminations, under an iodine
pressure of 0.2 mm and a methylene-iodide pressure of 1 mm
and at 30°C. The experimental results obtained (Table) were
represented in form of w_o/w_{st} as a function of $\lg \lambda$ (w_o =
reaction rate (RR) at intermittent illumination; w_{st} = (RR)
with constant illumination) (Fig 6). The constant of the (RR)
for the reaction $CH_2J^* + J$ amounted to $3 \cdot 10^{-12}$ cm^3/second, and the
value of the average life of the radicals was found to be:

Card 2/3 $2 \cdot 10^{-2}$ seconds. According to the mechanism $CH_2J_2^* + h\nu \longrightarrow$

A Study of the Reaction of Isotopic Exchange Between   SOV/76-33-2-35/45
CH_2J and J_2 by the Intermittent Illumination Method

$CH_2J^* + J^*$ (9) (and other reactions I - VI) the stationary concentration of the radicals was calculated to be $2 \cdot 10^{13}$ cm^{-3}. There are 6 figures, 1 table, and 4 references, 1 of which is Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki, Moskva (Moscow Institute of Chemical Physics of the Academy of Sciences, USSR)

SUBMITTED: July 31, 1957

Card 3/3

Z/056/63/020/002/005/007
E073/E135

AUTHOR: Solochovnik, S.F.

TITLE: Automatic machine for hardening long cylindrical components

PERIODICAL: Hutnictví a strojírenství. Přehled technické a hospodářské literatury, v.20, no.2, 1963, 93, abstract HS 63-1134. (Mashinostroyeniye, Kiev, no.4, 1962, 36-37)

TEXT: The article describes an automatic hardening machine for high-frequency surface hardening of components. A sketch showing the operation of the machine is given, and a diagram of the last stage circuit breakers. The machine hardens 66 components per hour.
2 figures.

[Abstracter's note: Complete translation.]

Card 1/1

BREDIKHIN, B.P.; SOLOD, B.A., master; CHERTKOV, I.Ye., pomoshchnik
mastera; SHAMANOV, L.G., prepododavatel'; KVASHIN, V.V.,
prepodavatel'.

"Design and repair of diesel locomotives" by A.A.Poido, I.G.
Kokoshinskii. Reviewed by B.P.Bredikhin and others. Elek.i
tepl.tiaga 3 no.9:p.3 of cover S '59.   (MIRA 13:2)

1. Priyemshchik Glavnogo upravleniya lokomotivnogo khozyaystva
Ministerstva putey soobshcheniya (for Bredikhin). 2. Depo
Rtishchevo II, Privolzhskaya doroga (for Bredikhin, Solod,
Chertkov). 3. Shkola mashinistov, stantsiya Penza, Kuybyshev-
skaya doroga (for Shamanov, Kvashin).
            (United States--Diesel locomotives)

    (Poido, A.A.)   (Kokoshinskii, I.G.)

SOLOD, 0. I.

"An Investigation of Certain Factors in the Longevity of Mine Conveyers (For Example, of the Reduction Gears of Scraping Bucket Conveyers)." Cand Tech Sci, Moscow Mining Inst imeni I. V. Stalin, 30 Dec 54. (VM, 22 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)

SO: SUM No. 556, 24 Jun 55

SOLOD, G.I., kand.tekhn.nauk.

      Effect of coal dust on the wear of reduction gear parts on mine
haulage machinery. Nauch.trudy MGI no.15:53-62 '55.   (MIRA 10:10)
             (Conveying machinery)
             (Mine dusts) (Mechanical wear)

SOLOD, G.I., kand.tekhn.nauk

Structural changes in surface layers of steels under the effect
of friction. Nauch.trudy MGI no.17:129-135 '56.   (MIRA 10:11)
(Coal mining machinery) (Mechanical wear) (Metallography)

SOLOD, G.I., kand.tekhn.nauk

Increasing the durability and operational dependability of
transmission devices on mine haulage machines. Nauch.trudy MGI
no.17:137-150 '56.
(MIRA 10:11)
(Conveying machinery--Transmission devices)

SOLCD, G.I.

Determining the resistance and power of flexible conveyers with
supporting bed. Nauch.trudy MGI no. 20:119-124 '58.   (MIRA 11:8)
(Conveying machinery)
(Mine haulage)

SHORIN, V.G., SOLOD, G.I.

Selecting basic parameters for trains in coal mines. Nauch. trudy
MGI no. 20:216-230 '58.   (MIRA 11:8)
                    (Mine railroads--Cars)

GORBACHEV, B.G., BANK, A.S., SOLOD, G.I., SHORIN, V.G.

Inertia brakes for mine cars. Nauch. trudy MGI no. 20:248-258 '58.
(MIRA 11:8)

(Mine railroads--Cars)
(Railroads--Brakes)

POLYAKOV, Nikolay Sergeyevich, prof.; SHTOKMAN, Il'ya Grigor'yevich,
prof.; KOMAROVA, Yevgeniya Kuz'minichna, dotsent; SPIVAKOVSKIY,
A.O., prof., retsenzent; ANDREYEV, A.V., dotsent, retsenzent;
VASIL'YEV, N.V., dotsent, retsenzent; YEVNEVICH, A.V., dotsent,
retsenzent; LOPATIN, S.I., dotsent, retsenzent; SOLOD, G.I.,
dotsent, retsenzent; SHAKHMEYSTER, L.G., dotsent, retsenzent;
SHORIN, V.G., dotsent, retsenzent; SAMOYLYUK, N.D., inzh.,
retsenzent; KOLOMIYTSEV, A.D., otv.red.; SHKLYAR, S.Ya., tekhn.red.;
KONDRAT'YEVA, M.A., tekhn.red.

[Problems and exercises on mine haulage] Sbornik zadach i uprazh-
nenii po rudnichnomu transportu. Izd.2., dop. i perer. Moskva,
Ugletekhizdat, 1959. 256 p.   (MIRA 13:4)

1. Chlen-korrespondent AN USSR (for Polyakov). 2. Chlen-korrespon-
dent AN SSSR (for Spivakovskiy). 3. Kafedra rudnichnogo transporta
Moskovskogo gornogo instituta (for Spivakovskiy, Andreyev, Vasil'yev,
Yevnevich, Lopatin, Solod, Shakhmeyster, Shorin).
                    (Mine haulage)

PHASE I BOOK EXPLOITATION   SOV/5431

Spivakovskiy, Aleksandr Onisimovich, Nikolay Deomidovich Samoylyuk, G. I. Solod, and Lev Grigor'yevich Shakhmeyster

Podzemnyye konveyyernyye ustanovki (Underground Conveyer Installations) Moscow, Gosgortekhizdat, 1960. 478 p. Errata slip inserted. 5,000 copies printed.

Resp. Ed.: A.O. Spivakovskiy; Ed. of Publishing House: A.D. Kolomeytsev; Tech. Eds.: V.L. Prozorovskaya and Z.A. Boldyreva.

PURPOSE: This book is intended for engineering and technical personnel of the mining industry engaged in designing and operating underground conveyers; it may also be useful to students of mining institutes and mining tekhnikums.

COVERAGE: The book describes underground conveyers used in the mining industry the USSR and abroad and the construction of their most important individual subassemblies and elements; the fundamentals of theory and calculations of underground scraper conveyers, belt conveyers, slat conveyers, and combined conveyers (new chain-belt and rope-belt conveyers) are discussed and basic reference material regarding USSR underground conveyers is presented.

Card 1/8

Underground Conveyer Installations

SOV/5431

The first part of the book was written by N.D. Samoylyuk, Candidate of Technical Sciences; the second part by L. G. Shakhmeyster, Candidate of Technical Sciences; the third by G. I. Solod, Docent, Candidate of Technical Sciences; and the fourth by A.O. Spivakovskiy, Professor. Section 4 of Ch. VII (Part II) was written by O.G. Karbasovly, Aspirant. There are 72 references: 53 Soviet, 10 English, 8 German, and 1 French.

TABLE OF CONTENTS:

Preface

Card 2/8

SPIVAKOVSKIY, A. O.; SOLOD, G. I. (docent)

"Model test of non-stationary processes on large band conveyor equipment."

report submitted for Intl Conf on Conveyor Engineering & Construction Machinery, Magdeburg, E. Germany, 7-12 Sep 64.

MILL, M. .. ....

Characteristics of traction force stroke and selecting the motive power for the drive of multiple-transmission conveyors. Izv.vys.ucheb. zav.gor.zhur. 7 no.9:105-112 '64. (MIRA 18:1)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki. Rekomendovana yezaegodnoy nauchno-tekhnicheskoy konferentsiey issledovateley.

SOLOD, G.I., kand.tekhn.nauk; PUKHOV, Yu.S., gornyy inzh.

    Experimental study of a test model of the KLK-1 belt cable conveyer.
    Ugol' 39 no.11:34-38 N '64.   (MIRA 18:2)

    1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.

ANDREYEV A.V., prof.; GRIGOR'YEV, V.N., dotsent; YEVNEVICH, A.V., prof.; SOLOD, G.I., dotsent; SPIVAKOVSKIY, A.O., prof.; SHAKHMEYSTER, L.G., dotsent

"Mine transportation, a book edited by I.G. Shtokman. Ugol'
40 no.1:82 Ja '65.   (MIRA 18:4)

1. Kafedra transportnykh mashin i kompleksov Moskovskogo instituta
radioelektroniki i gornoy elektromekhaniki.

SOLC , . F.

3257C. Voprosy Rezaniya Stegley Rasteniy Nozhom (Klinom). --- Vogl: Solod N.
(!) F. Izvestiya Gruz. Nauz. Nauch. -Issled. In-ta Gidrotekhniki i Melioratsii,
t. 1, 1949, s. 107-26. --- Rezyuome Na Gruz. Yaz. --- Bicliogr: 10 Nazb.

SC: Letopis' Zhurnal'nykh Statey, Vol 44, Moskva, 1949

SOLOD, V. I.

"Certain Questions of the Effectiveness of the Breakdown of Coal by the Working Parts of Machines Which Work on the Coarse-Grind Principle." Cand Tech Sci, Moscow Mining Inst imeni I. V. Stalin, 30 Dec 54. (VM, 22 Dec 54)

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SO: Sum. No. 556, 24 Jun 55

SOLOD, V.I., kand.tekhn.nauk.

Forces needed for pressing rods into coal bodies. Nauch.trudy
MGI no.15:95-98 '55. (MIRA 10:10)
  (Coal mining machinery--Testing)
  (Dynamics)

SOLOD, V.I., kand.tekhn.nauk

Correlation between forces acting on a coal mining machine
cutter and the parameters of coal being detached from the block.
Nauch.trudy MGI no.17:75-83 '56.   (MIRA 10:11)
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GETOPANOV, V.N., inzh.; KAZAK, Yu.N., inzh.; SOLOD, V.I., kand.tekhn.nauk

Mechanism of rock crushing by mining machine cutters. Nauch.
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                              (Coal mining machinery)

SOIOD, V.I.

Investigating the process of anthracite breaking by mining
machine cutters. Nauch. trudy MGI no.21:41-76 '57. (MIRA 11:9)
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SOLOD, V.I., dotsent, kand. tekhn. nauk

Principles of calculating the pull of a ring-type chain working part. Nauch. trudy Mosk. inst. radioelek. i gor. elektromekh. no.41:27-32 '62. (MIRA 16:10)

SOLOD, V.I., kand.tekhn.nauk; KARTAVYY, N.G., kand.tekhn.nauk

Preliminary results of introducing USB-2 coal plows in Donets
Basin mines. Ugol' 38 no.3:40-44 Mr '63.

(MIRA 18:3)

TOFCHIYEV, A.V.; SOLOD, V.I.; GETOPANOV, V.N.; KOVAL', P.V.

[Calculating the efficiency of mining cutter-loaders;
methods of calculation] Raschet proizvoditel'nosti gor-
nykh kombainov; metodika rascheta. Moskva, Nedra, 1965.
66 p.   (MIRA 18:5)

COLODANYUK, I. Kiyev); BULANOV, A. (Kiyev)

System first of all. Voen. znan. 41 no.7:16-18 Jl '65. (MIRA 18:7)

05486
SOV/141-2-2-11/22

AUTHORS: Gvozdover, S.D. and Solodar', G.G.

TITLE: Characteristic Equation of the Travelling-wave Tubes for
            Medium Currents

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
            1959, Vol 2, Nr 2, pp 229 - 243 (USSR)

ABSTRACT: A problem similar to that presented in this article has
            been dealt with earlier by S. Olving (Ref 2). A more
            general approach to the problem is attempted here, it being
            assumed that the geometrical parameters of the tubes are
            arbitrary. The notation adopted is similar to that of
            earlier work (Ref 1). Also, a new function, defined by
            Eq (1), is introduced; this is plotted in Figure 1. The
            basic linearised equations of the system, derived under
            the assumption that the alternating components are
            appreciably smaller than the direct ones, are similar to
            those of Ref 1:

$$M(\mathbf{T}, a\tau) = N(a\tau, b\tau) \qquad (2) ,$$

Card1/4   where M, N and T are defined by Eqs (3), (4) and (5).

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Characteristic Equation of the Travelling-wave Tubes for Medium Currents

The right-hand side term of Eq (2) can be represented in the form of Eqs (11). These can be expanded into the Taylor series so that N can be approximately represented by Eq (15). M of Eq (2) can be represented by Eqs (17). This can also be expanded into the Taylor series as is shown in Eq (19). The final expression for M is given by Eq (24). By substituting Eqs (15) and (24) into Eq (2), an approximate algebraic equation, with X as the unknown, is obtained. The resulting expression is in the form of Eq (24) or, finally:

$$X(1 + QBX)(X + L)^2 = - (1 - QX)^2 \qquad (26a)$$

where B is defined by Eq (26B). If the tube is such that it fulfils the conditions defined by Eqs (28), the characteristic equation is simplified and can be written as Eq (29a). The function M can also be expanded by means of the asymptotic formulae provided the conditions of Eq (30) are fulfilled; in this case, the characteristic

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Characteristic Equation of the Travelling-wave Tubes for Medium
Currents

equation is given by Eq (29б) which coincides with Eq (29a).
Similarly, it is possible to expand the function N by
means of the asymptotic formulae and the characteristic
equation is then in the form of Eq (30B). First, Eq (29a)
is investigated for L = 0 , which represents the condition
of complete synchronism. The equation is now written as
Eq (36a), which is a standard cubic equation; the complex
roots of the equation are plotted in Figure 2 (solid curves).
In the case of narrow beams, the conditions of Eq (28a)
are not fulfilled and it is necessary to solve the complete
fourth-degree characteristic equation (see Eq 26a). The
equation was solved for L ≠ 0 for various values of B .
Graphs illustrating the dependence of the roots of Eq (26a)
on Q for B = 0.25 and B = - 0.0635 are shown in Figure 7.
It is seen that the equation always has a pair of complex
conjugate roots having a positive real component. At small
Q and B > 0 , the equation has a pair of negative real
roots which, for Q = Q*, coincide and become a pair of

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Characteristic Equation of the Travelling-wave Tubes for Medium Currents

complex conjugate roots. The paper contains an appendix which gives expressions for the roots of Eq (36a) (see Eqs 1-6A) and an asymptotic expression for the gain factor of the tube (see the Eq 6"A). From the analysis, it is concluded that the complete fourth-degree equation has complex roots (in the region which is of most practical interest) which do not differ appreciably from those of Eq (29a). The coefficient of depression derived on the basis of Eq (26a) is twice lower than that of the "small-current theory".
There are 7 figures and 7 references, of which 6 are Soviet and 1 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
SUBMITTED: July 18, 1958

Card 4/4

ACC NR:AP7007721   SOURCE CODE: UR/0188/67/000/001/0043/0048

AUTHOR: Mamedli, R. M.; Solodar', G. G.; Yatsenko, L. A.

ORG: none

TITLE: Experimental study of a frequency multiplier based on a two-stage traveling-wave tube

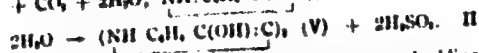SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fisika, astronomiya, no. 1, 1967, 43-48

TOPIC TAGS: traveling wave tube, frequency multiplication

ABSTRACT: Results of an experimental study of a traveling-wave tube frequency multiplier with input and output frequencies between 3000 and 9000 MHz are given. The multiplier (see Fig. 1) consists of an electron gun, two helical-type delay structures separated by a drift space, and a collector. Both helixes are impedance-matched to the inputs and the outputs with waveguides such

Card 1/2   UDC: 621.374.4

Solutions of vat dyes. N. N. Orlov, L. S. Solodar and M. A. Rosenman. *Ukrain. Khim. Zhur.* 9, 221–61(1934).—Indigo blue (I) and indigo 4B (II) are not reduced by HCO_2H (III) in aq. soln.; II, but not I, is reduced by SO_2, while both I and II are reduced by III in presence of SO_2, according to the reactions $2H_2SO_3 + III \rightarrow H_2S_2O_4 + CO_2 + 2H_2O$; $NH \cdot C_6H_4 \cdot CO \cdot C:)_2$ (IV) $+ H_2S_2O_4 + 2H_2O \rightarrow (NH \cdot C_6H_4 \cdot C(OH):C)_2$ (V) $+ 2H_2SO_3$. II can be reduced also by mtg. C_5H_5N with SO_2, and adding II and Zn, according to the reactions $C_5H_5N + SO_2 \rightarrow C_5H_5N \cdot SO \cdot O$ (VI); $VI + Zn \rightarrow C_5H_5N \cdot S \cdot O$ (VII) $+ ZnO$; $VII + IV \rightarrow$ C₆H₄

[structure diagram]

$VIII + C_5H_5N$; $VIII + 2H_2O \rightarrow V + H_2SO_3$; III can replace Zn in the above reactions. Directions are given for preps. indigosols from the leuco bases by adding C_5H_5N and VI, gradually raising the temp. to 65° (during 4 days), adding H_2O to ppt. the C_5H_5N sulfites, and warming the latter with 3 N NaOH. B. C. A.

10

Dealkylation of aromatic hydrocarbons The problem in connection with the reversibility of the Friedel-Crafts reaction. N. N. Orlov and L. S. Sokolar. *J. Applied Chem.* (U.S.S.R.) 8, 117-29(in German 129-30(1945)).— In the dealkylation carried out according to Fischer and Niggemann (C.A. 11, 947) the yield of low-boiling products increases with increase in the concn. of $AlCl_3$ and the temp., having a max. at 4% $AlCl_3$. The demethylation of C_6H_5Me effected by passing HCl through the reaction mixt. is of no practical value because of low yields, this justifying the assumption that the Friedel-Crafts reaction (*Compt. rend.* 100, 996(1885)) is not quite in agreement with the mechanism proposed by Dougherty (C.A. 23, 1200). A continuous process permits of raising the PhMe yield to 25-30%. Twelve references. A. A. B

METALLURGICAL LITERATURE CLASSIFICATION

acylated p-aminobenzosulfonyl chlorides. L. S. Solodar' and A. P. Milovanova. U.S.S.R. 64,734, May 31, 1945. In the production of acylated p-aminobenzosulfonyl chlorides by the action of $ClSO_3H$ on acylated aniline derivs., the reaction mixt. is poured into H_2O or a mixt. of H_2O and ice at 20-50° in order to sep. a large cryst. reaction product. The chlorosulfonation of acylanilines may be carried out in the presence of such addns. as aromatic hydrocarbons, heterocyclic bases, tertiary aromatic amines, or acylanilines which form low-melting sulfonyl chlorides. The sepn. of sulfonyl chlorides from the reaction mixt. is carried out in a continuous process in an app. of the column type equipped with a stirrer. M. Hoseh

Sulfanilamide and 1-amino-2-naphthol-4-sulfonamide.
L. S. Solodar', A. P. Milovanova, and L. N. Shevchenko.
U.S.S.R. 69,765, Jan. 31, 1948.   Phenylazo-2-naphthol is
treated with HSO₂Cl to give phenylazo-2-naphthol-4,1'-
disulfonyl chloride which is converted to the disulfonamide
by the action of aq. NH₃.   The disulfonamide is reduced
to sulfanilamide and 1-amino-2-naphthol-4-sulfonamide.
                                        M. Hosch

CA

17

Sulfanilamide. L. S. Solodar and A. P. Milovanova. U.S.S.R. 65,871, Feb. 28, 1946. Phenylcarbamide is converted into phenylcarbamide-*p*-sulfochloride, and the latter is changed to sulfanilamide by sapong. it in an aq. alk. medium either by boiling, e.g., for 1 hr., or in an autoclave at 130°.

M. Hoseh

CA

PROCESSES AND PROPERTIES INDEX

2,4-Dichlorobenzoic acid. L. S. Sokolov, L. Kh. Skalaban, G. H. Gorlach, and P. A. Khinskaya. U S S R. 65,-880, Feb. 28, 1946. Vapors of 2-chloro-4-nitrotoluene are chlorinated at 350–400°, forming 2,4-dichlorobenzoyl chloride. The latter is converted by the usual means into 2,4-dichlorobenzoic acid. M. Hoseh

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

Carbanilide 4.4'-disulfonyl chloride. I. S. Sidalar, A. P. Milovanova, and Z. N. Shevchenko. U.S.S.R. 66,437, May 31, 1946. ClSO₃H and carbanilide or carbanilide with an admixt. of AcNH₂, phenylurea, or NH₂CO₂Ph is fed into the reactor at 50-70°. The reaction product is removed from the app. and cooled to 20-25°. The process is continuous.   M. Hirsch

CA

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Advances in chlorination of hydrocarbons in the last ten years. L. S. Solodar and V. V. Markin. *Uspekhi Khim.* 16, 83–109(1947).—Crit. review, particularly from the point of view of kinetics and mechanism; 130 literature references.   N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

CA

10

Chlorosulfonation of acyl amilides. I. Role of sulfuric acid. L. S. Sokolar and Z. N. Shevchenko (Tsentral. Lab. Zavoda "Akrikhin"). Zhur. Priklad. Khim.) 22, 508 17(1949). —In the usual mode of chlorosulfonation of acylamilides, such as AcNHPh, PhNHCO₂Et, CO₂NHPh₂, the predominant reaction occurs with ClSO₃H, while the H₂SO₄ present in the reagent reacts to a limited extent only. Hence, the yields of RSO₂Cl do not rise even upon increase of the H₂SO₄ content in the mixt., provided that the constancy of the ClSO₃H/H₂SO₄ ratio is maintained. Heating the sulfonation mixts. above 50-60° leads to conversion of RSO₂Cl into RSO₃H, which increases with temp. and is higher for acylamilides with carbonyl or carbomethoxy groups than for the Ac deriv.; the rate of chlorosulfonation is similarly increased in these compds. over the Ac deriv. The results, given graphically, indicate that chlorosulfonation of AcNHPh rises up to 70°, falling upon subsequent increase of temp. to 90°, through the interconversion noted above; with PhNHCO₂Et the inflection occurs at 60°. Generally, a longer than necessary reaction period lowers the yield of RSO₂Cl (essentially linearly) and the drop is most pronounced at higher temps., i.e. with increased conversion to RSO₃H. Analysis of the reaction mixts. was done by decompn. with ice, filtration of the RSO₂Cl, its hydrolysis, and detn. of ionic Cl, while the original filtrate is hydrolyzed with hot NaOH and the sulfanilic acid resulting is titrated with NaNO₂. The diaminodiphenyl sulfone detn. is done by evapn. of the neutralized mass to dryness, extn. with Me₂CO, addn. of dil. HCl, concn., and titration with NaNO₂. II. Mechanism. Ibid. 874-81(1949). Chlorosulfonation of AcNHPh and of PhNHCO₂Et at 50°, 60°, 70°, and 90° by the previously described technique (cf. part I), proceeds in 3 stages: the early part of the process, during which a rapid rise of sulfonic acids and sulfonyl chlorides takes place up to 15 mins., is followed by a period during which the yield of RSO₂Cl continues to rise but the yield of RSO₃H declines, indicating conversion of RSO₃H into RSO₂Cl; the last stage with AcNHPh is characterized by leveling

off of the RSO₂Cl formation, while with PhNHCO₂Et the process of decrease of RSO₂Cl takes place with a simultaneous rise of RSO₃H, especially noted at 90°. AcNHPh behaves analogously at 90°. The results, presented graphically, indicate that the conversion of RSO₃H into RSO₂Cl occurs by interaction of an adduct of the starting material with ClSO₃H with another mol. of ClSO₃H, yielding H₂SO₄ and HCl; however, the HCl balance proves that the formation of this intermediate is excluded, as essentially quant. amts. of HCl are evolved in the 1st step. The transformation in stage d is an irreversible reaction of RSO₂Cl with H₂SO₄, apparently by acidolysis of the acyl group on the N; thus, heating p-AcNHC₆H₄SO₂Cl with H₂SO₄ and ClSO₃H gives a progressive increase with time and temp. of SO₃H deriv. at the expense of SO₂Cl deriv., while the yield of sulfanilic acid upon quenching the mixt. with ice-water rises similarly. Generally, lower temps. favor the preservation of RSO₂Cl in such acidolyses. The reactions cited above are shown on a flow sheet.   G. M. Kosolapoff

SOLODAR, L. S.

PA 67/49T64

USSR/Chemistry - Chlorosulfonation   Aug 49
                Anilides

"The Mechanism of the Chlorosulfonating of Acylani-
lides," L. S. Solodar, Z. N. Shevchenko, Cen Lab,
"Akrikhin" Plant, 8 pp

"Zhur Prik Khim" Vol XXII, No 8

Studied the three-stage dynamics of chlorosulfonating
of acetanilide and phenylurethylan at 50, 60, 70,
and 90° C: the formation of the acylanilide sulfo
acid, its subsequent conversion into acylanilide
sulfo chloride, and the acidolysis of the acylamino
groups. Lowered temperatures decreased the

67/49T64

USSR/Chemistry - Chlorosulfonation   Aug 49
               (Contd)

acidolysis of the acylamino groups, resulting in
greater yields of sulfo chloride. Submitted -
15 Mar 49.

67/49T64

MIKHAYLOVA, L.A.; SOLODAR', L.S.; OVCHINNIKOVA, Ye.A.; KOZYREVA, G.V.;
        SAMUROVA, S.I.; YEFIMOVA, L.N.

Reduction of n-nitrosalicylic acid in n-aminosalicylic acid.
Zhur.prikl.khim. 30 no.4:623-629 Ap '57.   (MIRA 10:7)

1. Institut khimicheskikh reaktivov Akademii nauk SSSR.
                    (Salicylic acid)

SOLODAR', L.S.; GURVICH, Ya.A.

Scientific research work at Dorogomilovskii Chemical Plant. Zav.
lab. 26 no.12:1430-1432 '60.   (MIRA 13:12)

1. Nachal'nik TSentral'noy laboratorii Dorogomilovskogo khimicheskogo
zavoda (for Solodar'). 2. Nachal'nik fizicheskoy laboratorii
Dorogomilovskogo khimicheskogo zavoda (for Gurvich).
                    (Chemical laboratories)

SOLODAR, M.B., inzh.

Reinforcing steel structures in main departments of open-hearth plants. Stroi. prom. 36 no.1:10-14 Ja '58.   (MIRA 11:1)
(Open-hearth furnaces)
(Precast concrete construction)

SOLODAR', M.B.; DUDAVSKIY, A.I.

Possibilities for lowering construction costs of marine signal
towers. Mat.po stal'.konstr. no.5:157-164 '59.   (MIRA 13:8)
                (Beacons)

SOLODAR', M.B., inzh.

Improve designs of bunkers. Prom. stroi. 38 no.11:30-35 '60.
(MIRA 13:10)

1. Leningradskoye otdeleniye Gosudarstvennogo proyektonogo institu-
ta Proyektstal'konstruktsiya.
(Ore dressing—Equipment and supplies)

KOROBOV, V.M., inzh.; SOLODAR', M.B., inzh.

More about calculating the three-dimensional work of the steel frame of a one-story industrial building. Prom. stroi. 40 [i.e. 41] no.4:59-61 Ap '63. (MIRA 16:3)
(Industrial buildings)

SOLODAR', M.B., inzh.

Some problems of design specialization and of the reliability of steel elements. Prom. stroi. 40 [i.e. 41], no.5:28-32 My '63.
(MIRA 16:5)

1. Leningradskoye otdeleniye Gosudarstvennogo instituta po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

(Steel, Structural)

SOLODAR', M.B., inzh.; BRYANCHANINOVA, O.A., inzh.

Efficient designs of joints of composite elements. Mont. i spets. rab. v stroi. 25 no.1:8-11 Ja '63.   (MIRA 16:6)

1. Leningradskoye otdeleniye Gosudarstvennogo proyektnogo instituta po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.
                    (Building—Details)

SOLODAR', M.B., inzh.; PLISHKIN, Yu.S., inzh.

Defects in the design of steel elements for conveyor trestles.
Prom. stroi. 41 no.7:33-36 Jl '64.   (MIRA 17:8)

1. Leningradskoye otdeleniye Gosudarstvennogo instituta po
proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh kon-
struktsiy i mostov.

SOLODAR', M.B., inzh.; PLICHKIN, Yu.S., inzh.

Problems of increasing the operational reliability of crane elements.
Prom.stroi. 42 no.11:9-13 N '64.   (MIRA 18:8)

ANNINSKIY, L.; LIKHAREV, B.; SOLODAR', TS.; KAZANTSEV, I., red.;
ZHDANOVA, G., tekhn.red.

[Altai reporting; "Literaturnaia gazeta" in the virgin land,
August-September, 1959] Altaiskii reportazh; "Literaturnaia
gazeta" na tseline, avgust-sentiabr' 1959 g. Barnaul,
Altaiskoe knizhnoe izd-vo, 1960. 197 p.   (MIRA 14:4)
    (Altai Territory--Description and travel)

SOLODAR', Ye.N., inzh.

"Reduced cloth weave" for knitted lasting. Leg. prom. 18 no.8:33-34
Ag '58.   (Knit goods)   (MIRA 11:9)

SOLODAR', Ye.N., inzh.

New book on knitting ("Double rib and reverse knitting machines in the technology of knitted clothes" by V.N.Esipenko, D.M. Potemkin. Reviewed by K.N.Solodar'). Tekst.prom. 19 no.1:87 Ja '59.
(MIRA 12:1)
(Knitting machines) (Esipenko, V.N.) (Potemkin, D.M.)

L 27717-66   EWT(1)   IJP(c)   GG/AT

ACC NR: AP6011552   SOURCE CODE: UR/0051/66/020/003/0399/0407

AUTHOR: Ivanova, A. V.; Solodchenkova, S. A.

ORG: none

TITLE: Quantum mechanical calculation of the coefficients of continuous absorption for certain components of strongly heated air

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 399-407

TOPIC TAGS: air, quantum theory, absorption coefficient, photoelectric effect, wave function, photoionization, free path

ABSTRACT: The authors have carried out a quantum-mechanical calculation of the co-efficients of continuous absorption for the ions N^{+4} and O^{+5}, which have considerable concentrations in air heated to several hundred thousand degrees. The calculations are based on the method of self-consistent field with allowance for exchange. The temperatures 150,000—800,000K, densities 0.01—10, and spectral region 0.7—50 Ry were covered. Only the photoelectric absorption was taken into account in the cal-culations, since at the temperatures in question the bremsstrahlung absorption is negligible. The photoionization cross sections used in the calculations were cal-culated with the aid of Hartree-Fock wave functions previously calculated by one of the authors (Ivanova, Opt. i spektr. v. 16, 925, 1964). For some temperatures and for normal density, the values of the mean free path were also calculated. It is concluded from the results that: (a) Up to 300,000K the principal role in the ab-sorption of air at normal density is played by the ground and first-excited states

UDC: 535.341.001.1

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L 27717-66   2

ACC NR: AP6011552

of N^{+4} and O^{+5}. Starting with 300,000K, intense photoionization sets in from the excited levels of these ions, and at 500,000—800,000K the contribution due to the excited levels becomes predominant. (b) The excited levels cause the absorption max-imum to shift with increasing temperature towards the longer wavelengths. (c) The absorption of the ions N^{+4} and O^{+5} lies in the region close to the Planck radiation curve, which occurs for the temperatures 150,000, 300,000, and 500,000K at ~2.7, 5.5, and 9 Ry, respectively. The corresponding mean free paths obtained at 150,000, 300,000, and 500,000K do not agree with the values obtained on the basis of the hydrogen-like approximation. The reasons for the discrepancy are briefly discussed. It is concluded that to reconcile the data it is necessary to make allowance in the quantum-mechanical calculations for other ions present in strongly heated air. The authors thank A. S. Kompaneyets and N. I. Kuznetsova for useful discussions. Orig. art. has: 5 figures, 6 formulas, and 8 tables.   [02]

SUB CODE: 20/   SUBM DATE: 14Dec64/   ORIG REF: 005/   OTH REF: 010/ ATD PRESS:
                                                                        500(

Card 2/2   BLG

SUVOROV, S., kand.sel'skokhoz.nauk; SOLODENIKOV, L., inzh.

Study and calibration of the DKV-3 grain temperature regulating
system. Muk.-elev. prom. 27 no.9:24-27 S '61.   (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i
produktov yego pererabotki.
                (Granaries--Heating and ventilation)

SOLODENIKOV, V.N.

Selection of efficient parameters for a cable drum for mobile,
electrically driven agricultural machines. Sel'khozmashina
no.12:16-18 D '53.   (MLRA 6:12)

1. Aspirant VIESKh.

(Agricultural machinery)

[illegible name]

Dissertation: "Investigation of the Driving Gear of the Cable Drum of an Electric Combine."
Cand Tech Sci, Joint Sci Council of All-Union Sci Res Inst of Mechanization of Agriculture
(VIM) and All-Union Sci Res Inst of Electrification of Agriculture (VIESKh), 25 May 54.
Vechernyaya Moskva, Moscow, 14 May 54.

SO: SUM 254, 26 Nov 1954

KULEBAKIN, V.S., akademik, redaktor; BUDZKO, I.A., doktor tekhnicheskikh nauk, redaktor; GAMELIN, A.M., kandidat tekhnicheskikh nauk, redaktor; GLEBOVICH, A.A., kandidat tekhnicheskikh nauk, redaktor; DREVS, O.V., kandidat tekhnicheskikh nauk, redaktor; LIBENSON, D.Ya., kandidat tekhnicheskikh nauk, redaktor; SLAVIN, P.M., kandidat tekhnicheskikh nauk, redaktor; SOLODENIKOV, V.N., kandidat tekhnicheskikh nauk, redaktor; SHUMILOVSKIY, N.N., doktor tekhnicheskikh nauk, redaktor; KURDYUKOV, K.P., kandidat tekhnicheskikh nauk, redaktor; KLIMOV, V.A., redaktor izdatel'stva; MOSKVICHEVA, N.I., tekhnicheskiy redaktor

[Automatization of work in agriculture; papers delivered at the conference November 25 - December 2, 1954] Avtomatizatsiia poroiz-vodstvennykh protsessov v sel'skom khoziaistve; materialy soveshcha-niia, 25 noiabria - 2 dekabria. Moskva, Izd-vo Akademii nauk SSSR, 1956. 452 p.   (MIRA 9:12)

1. Soveshchaniyepo avtomatizatsii proizvodstvennykh protsessov v sel'skom khozyaystve, 1954. 2. Institut avtomatiki i telemekhaniki AN SSSR (for Kulebakin). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Glebovich, Solodenikov)
          (Automatic control)   (Agriculture)

SOLODENIKOV, V.N., kandidat tekhnicheskikh nauk.

Causes of slackening in cable tension and methods for controlling
it. Avt. i trakt. prom. no.1:31-34 Ja '56.   (MLRA 9:6)

1.Vsesoyuznyy institut elektrifikatsii sel'skogo khozyaystva.
                (Cables)

112-57-7-14610

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 7, p 123 (USSR)

AUTHOR: Solodenikov, V. N.

TITLE: Investigating the System of a Cable Take-up Device With a Cable-Reel Drive (Issledovaniye systemy kabelepriyemnogo ustroystva s privodom kabel'nogo barabana)

PERIODICAL: Nauch. tr. Vses. n.-i. in-ta elektrifik. s.-kh. (Scientific Works of the All-Union Scientific-Research Institute for Electrification of Agriculture), 1956, Nr 2, pp 95-122

ABSTRACT: A theoretical investigation is presented of the static and dynamic characteristics of a system comprising a cable take-up device and a cable-reel drive; the system is a part of electric tractors ET-5, ETU-13, and KhTZ-15. An equation of constant cable tension is deduced, and the principal methods of tension regulation are set forth. Static characteristics of the cable take-up device and reel parameters during cable winding and unwinding are presented. Dynamic characteristics of the cable take-up system with non-regulated drive are analyzed, and a differential equation of the system is given. The following

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Investigating the System of a Cable Take-up Device With a Cable-Reel Drive

conclusions are offered: (1) the system comprising the reel (with cable) and
the elastic dragging section of the cable is an oscillatory system; (2) natural
oscillations of the cable span can be assumed to be continuous; (3) fluctuations
in cable tension caused by the natural oscillations of the system are qualitatively
influenced by the elastic characteristic of the cable; (4) conditions of cable
work on the machine can be considerably improved by using joints with appro-
priate mechanical characteristics and, by means of a compensator, selecting a
suitable elastic cable characteristic in the cable-duct; (5) calculation and analy-
sis of the system with a non-regulating drive (within one cable layer on the reel)
can be made with sufficient accuracy by using a linearized system equation.

I. V. I.

Card 2/2

SOLODENIKOV, V.N., kand. tekhn. nauk

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                        (Farm manure)
                        (Farm equipment)

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SOLODENKO, G.

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PHASE I BOOK EXPLOITATION   SOV/4552

Ivanov, V. A., G. P. Solodenko, I. M. Gissin, and N. N. Ignatenko

Kompleksnaya mekhanizatsiya i avtomatizatsiya na zavode Rostsel'mash (Full
    Mechanization and Automation at the Rostsel'mash [Rostov-na-Donu Agricultural
    Machinery] Plant). [Rostov-na-Donu] Rostovskoye knizhnoye izd-vo, 1959. 185 p.
    Errata slip inserted. 2,000 copies printed.

Ed.: I. V. Zherebkov; Tech. Ed.: M. V. Marinyuk.

PURPOSE: This book is intended for technical personnel in plants and design
    institutes, innovators in production and students of engineering schools of
    higher education.

COVERAGE: The authors present the results of experience gained from the mechaniz-
    ation and automation of the Rostsel'mash Plant. Problems of line production
    are discussed and ways for solving these problems are considered. The authors
    describe lines and installations adopted in assembly and press-forging shops.
    Special attention is paid to the mechanization of organic coating. The final
    section of the book deals with the full mechanization of foundry processes and

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SOLODENKO, G.P., inzh.; SAPOV, P.M., inzh.; ZHAVORONKO, P.I., inzh.;
KOCHKA, V.T., inzh.

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SOLODENKO, V.

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SO: Vechernyaya Moskva, Jun, 1947 (Project #17836)